



Agilent Technologies

2013 Global Handheld General Purpose Test Equipment
New Product Innovation Leadership Award



F R O S T & S U L L I V A N



50 Years of Growth, Innovation & Leadership

New Product Innovation Leadership Award Handheld General Purpose Test Equipment Global, 2013

Frost & Sullivan's Global Research Platform

Frost & Sullivan is in its 50th year in business with a global research organization of 1,800 analysts and consultants who monitor more than 300 industries and 250,000 companies. The company's research philosophy originates with the CEO's 360-Degree Perspective™, which serves as the foundation of its TEAM Research™ methodology. This unique approach enables us to determine how best-in-class companies worldwide manage growth, innovation and leadership. Based on the findings of this Best Practices research, Frost & Sullivan is proud to present the 2013 Global New Product Innovation Leadership Award in Handheld General Purpose Test Equipment to Agilent Technologies, Inc. (Agilent).

Significance of the New Product Innovation Leadership Award

Key Industry Challenges

Handheld general purpose test equipment is mainly used in field applications. As a result, field engineers are challenged with environmental conditions requiring equipment that can execute tests in harsh, dusty, and humid conditions. In addition, because they need to work in the field, they also face the challenge of carrying their equipment. In such a scenario, they need light and small instruments. However, as technologies converge, the complexity of what needs to be tested is increasing, in turn leading to the need for more instruments and requiring field technicians to carry multiple devices. As such, they also require more integrated equipment.

In summary, the industry strongly demands robust, cost-effective, and integrated handheld test equipment able to deliver reliable test results. Test equipment providers who are able to develop such an innovative handheld test solution are expected to be in a better position to compete and grow in the global handheld general purpose test equipment market.

Key Benchmarking Criteria for New Product Innovation Award

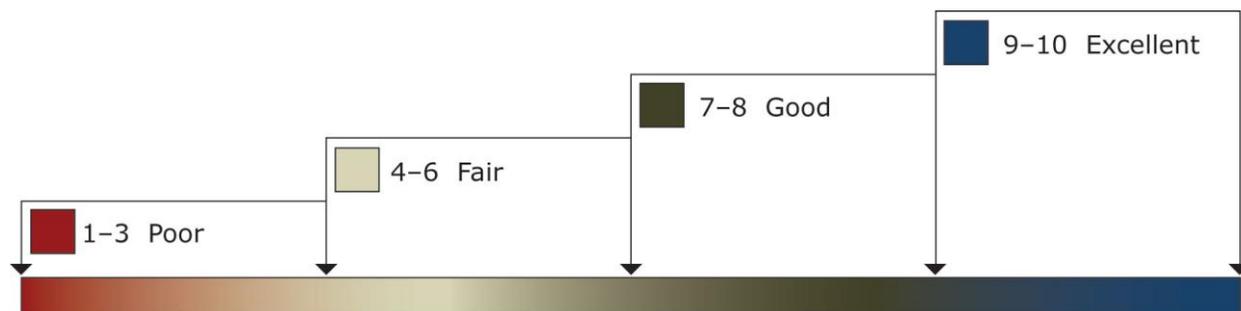
For the New Product Innovation Leadership Award, the following criteria were used to benchmark Agilent's performance against key competitors:

- Innovative Element of the Product
- Leverage of Leading-Edge Technologies in Product
- Value Added Features/Benefits
- Increased Customer ROI (small change)
- Customer Acquisition/Penetration Potential

Decision Support Matrix and Measurement Criteria

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Matrix (DSM). The DSM is an analytical tool that compares companies' performance relative to each other with an integration of quantitative and qualitative metrics. The DSM features criteria unique to each Award category and ranks importance by assigning weights to each criterion. The relative weighting reflects current market conditions and illustrates the associated importance of each criterion according to Frost & Sullivan. Fundamentally, each DSM is distinct for each market and Award category. The DSM allows our research and consulting teams to objectively analyze each company's performance on each criterion relative to its top competitors and assign performance ratings on that basis. The DSM follows a 10-point scale that allows for nuances in performance evaluation; ratings guidelines are shown in Chart 1.

Chart 1: Performance-Based Ratings for Decision Support Matrix



This exercise encompasses all criteria, leading to a weighted average ranking of each company. Researchers can then easily identify the company with the highest ranking. As a final step, the research team confirms the veracity of the model by ensuring that small changes to the ratings for a specific criterion do not lead to a significant change in the overall relative rankings of the companies.

Chart 2: Frost & Sullivan's 10-Step Process for Identifying Award Recipients



Best Practice Award Analysis for Agilent

The Decision Support Matrix, shown in Chart 3, illustrates the relative importance of each criterion for the New Product Innovation Award and the ratings for each company under evaluation. To remain unbiased while also protecting the interests of the other organizations reviewed, we have chosen to refer to the other key players as Competitor 1 and Competitor 2.

Chart 3: Decision Support Matrix for New Product Innovation Leadership Award

<i>Measurement of 1-10 (1 = lowest; 10 = highest)</i>	Award Criteria					
	Innovative Element of the Product	Leverage of Leading-Edge Technologies in Product	Value Added Features/Benefits	Increased Customer ROI (small change)	Customer Acquisition/Penetration Potential	Weighted Rating
Relative Weight (%)	20%	20%	20%	20%	20%	100%
Agilent	9.0	9.0	9.0	9.0	9.0	9.0
Competitor 1	8.0	8.0	8.0	8.0	8.0	8.0
Competitor 2	8.0	8.0	7.0	7.0	7.0	7.4

Criterion 1: Innovative Element of the Product

Agilent, one of the world's largest providers of advanced test and measurement instrumentation, set new standards in the global handheld general purpose test equipment market with the introduction of the FieldFox handheld analyzers in August 2008 with frequency coverage up to 6 GHz. In 2012, they introduced the microwave versions with improved performance and capabilities. The FieldFox combination analyzers, which are a part of the FieldFox product family, combine the functionalities of multiple test instruments, which include a vector network analyzer (VNA), spectrum analyzer, and cable and antenna analyzer in a single integrated handheld test unit. With an aim to provide field engineers with world-class reliability and maximum test accuracy, Agilent designed its FieldFox analyzers to deliver bench-top level performance accuracy in harsh field environments. The company currently offers 14 new analyzers under its FieldFox family that cover both radio-frequency (RF) and microwave frequencies. The FieldFox analyzers, which are currently available in frequencies of 4, 6, 9, 14, 18, and 26.5 GHz, eliminate the need to carry multiple handheld test instruments, thereby providing a cost-effective alternative to competitors' products. In June 2013, Agilent added a new feature to its FieldFox analyzers

that enables the user to remotely manage and control the test equipment using an iOS-based device, such as an iPad or an iPhone. The FieldFox handheld analyzers are available in three main versions, which include an RF and microwave combination analyzer, RF and microwave VNA, and microwave spectrum analyzer. The key features offered by the combination analyzer include cable and antenna analysis, full two-port vector network analysis, and spectrum analysis. The FieldFox combination analyzer can also be used as an interference analyzer, vector volt meter, independent CW signal generator and full-band tracking generator, power meter, variable direct current (DC) source, Global Positioning System (GPS) receiver, and frequency counter.

Criterion 2: Leverage of Leading-Edge Technologies in Product

Driven by Agilent's strong capabilities in RF and microwave technologies, along with a dedicated research and development (R&D) team, the FieldFox analyzers have been incorporated with best-in-class technological features and functionalities. Agilent displays unparalleled technical expertise by using miniaturized components and integrating them in a compact 3-kg package without compromising performance. In addition to offering such a high level of integration, the FieldFox analyzers also meet the MIL-PRF-28800F Class 2 specifications for superior durability and robustness; and the MIL-STD-810G Method 511.5 Procedure I for use in explosive environments. The FieldFox analyzers are designed to operate in a temperature range of -10°C to 55°C with a battery life of 3.5 hours and with no vents or fans; the products are also reliable at withstanding high-salt and humid environments. In addition, they are designed to be dust and moisture resistant in order to operate efficiently in challenging field environments by adhering to the IP53 requirements.

Criterion 3: Value-Added Features/Benefits

The key differentiating factor for Agilent's FieldFox handheld analyzers is its multi-instrument functionality. The company also developed the product keeping in mind the need to provide bench-top-type performance in a handheld version and usability in field applications. Instead of stopping there, the company worked afresh on the product development to suit installation and maintenance (I&M) applications rather than just transferring some of the bench-top instrument features into a handheld device. This highly advanced product combines high integration along with world-class test performance, which delivers unmatched value to its customers across the globe. With this product, the need to carry multiple handheld test instruments in the field is eliminated. Moreover, the lightweight and compact design of the instrument allows field personnel to operate it using a single hand, and even wearing gloves. Another key benefit offered by Agilent with the FieldFox products is that each of the capabilities can be added to the device through software upgrades. For instance, a customer can purchase a basic instrument initially and then add new capabilities, such as spectrum analysis, later by purchasing a software license. The instrument is upgraded by the company within 24 hours of the purchase, without the need for any hardware changes. This is highly convenient and also reduces the need to own multiple hardware platforms for multiple test capabilities.

Criterion 4: Increased Customer ROI

Agilent's FieldFox handheld analyzers are available at a starting price of U.S. \$10,000. The price varies depending on the frequency and the instrument's capabilities. However, the FieldFox's ability to integrate the functionalities of multiple test instruments makes it a highly cost-effective alternative to purchasing a number of different handheld analyzers for different applications. Besides, the product's robust design enables it to withstand rain, dust, and humidity, thereby providing it with a relatively longer life span when compared to other handheld testers available on the market. While major competitors provide a one-year warranty period for their handheld testers, Agilent offers a warranty period of three years for its products, which demonstrates the company's confidence in the product's superior quality and performance. Additionally, with the FieldFox handheld analyzers, customers can significantly save on calibration costs. All handheld analyzers are generally required to be calibrated once per year, but in the case of Agilent's FieldFox analyzer, multiple instruments can be calibrated at once.

Criterion 5: Customer Acquisition/Penetration Potential

Although Agilent's FieldFox handheld analyzers are relatively new on the market, the product holds significant potential in the global handheld general-purpose test equipment market. With the ability to offer multi-testing capabilities on a single platform, the FieldFox can be used in traditional handheld testing applications as well as in growing applications in aerospace and defense, education, commercial wireless, and healthcare, where quick and accurate measurements are required. Some of the key target applications for this product include radar installations, satellite communications, as well as military applications. According to one major aerospace defense prime contractor, "The technology Agilent has developed is simply superior".

Agilent has been participating in trade shows and exhibitions to demonstrate the FieldFox analyzer's superior abilities in comparison to other handheld testers and to increase awareness about the benefits of this product. Customers are usually hesitant about using handheld analyzers in manufacturing and research and development (R&D) applications as these testers generally cannot match the performance of bench-top instruments. However, Agilent's product demonstrations are resulting in the gradual adoption of the FieldFox in R&D to complement bench-top.

In addition, Agilent's strong network of direct and indirect sales channels allows it to ensure the availability of its product in different geographic markets of the world. Considering the superiority of the FieldFox analyzers, in terms of performance, size, and durability, the product is expected to be widely adopted around the world in the near future.

Conclusion

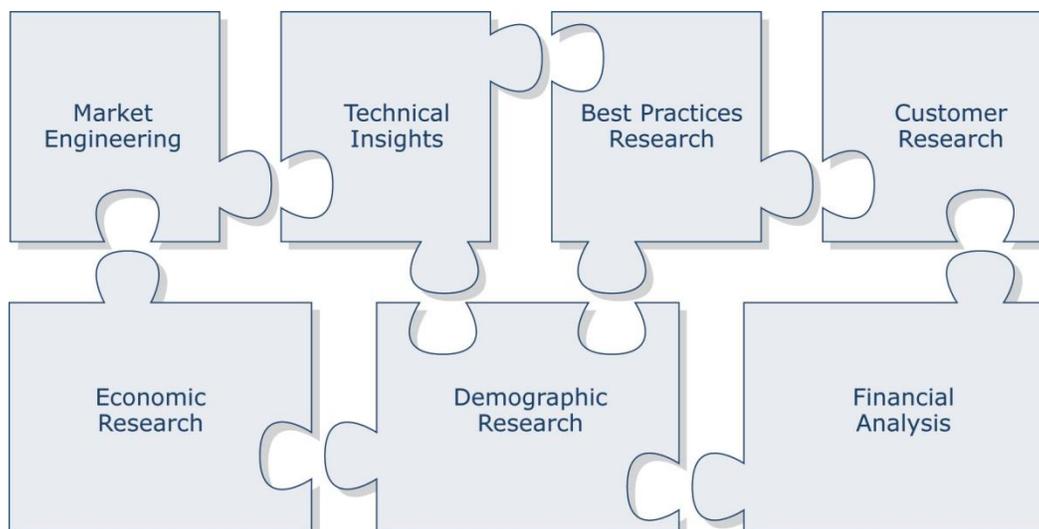
Agilent, a leading global provider of advanced test and measurement instruments,

introduced its innovative FieldFox handheld analyzers in August 2012. Since then, the company has proven that it is able to compete against other Tier 1 vendors and gain market share in the handheld test equipment market. This unique product incorporates the capabilities of multiple test equipment—including a VNA, a spectrum analyzer, and a cable and antenna analyzer—in a single compact package. Additionally, the test equipment is designed to provide bench-top-level performance, combined with high robustness and durability, which makes it ideal for a variety of applications, from traditional applications for handheld instrumentation (installation and maintenance) to research and development. Considering its ability to introduce such an innovative test solution, Agilent has been chosen as the worthy recipient of the 2013 Frost & Sullivan New Product Innovation Leadership Award in the Global Handheld General Purpose Test Equipment Market.

Critical Importance of TEAM Research

Frost & Sullivan's TEAM Research methodology represents the analytical rigor of our research process. It offers a 360-degree view of industry challenges, trends, and issues by integrating all seven of Frost & Sullivan's research methodologies. Our experience has shown over the years that companies too often make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Frost & Sullivan contends that successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. In that vein, the letters T, E, A and M reflect our core technical, economic, applied (financial and best practices) and market analyses. The integration of these research disciplines into the TEAM Research methodology provides an evaluation platform for benchmarking industry players and for creating high-potential growth strategies for our clients.

Chart 4: Benchmarking Performance with TEAM Research



About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best-in-class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best-practice models to drive the generation, evaluation and implementation of powerful growth strategies. Frost & Sullivan leverages 50 years of experience in partnering with Global 1000 companies, emerging businesses and the investment community from more than 40 offices on six continents. To join our Growth Partnership, please visit <http://www.frost.com>.